

# Governor's STEM Academy Brief



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The purpose of this monthly brief is to provide information, resources, and a networking vehicle to support the STEM (science, technology, engineering, and mathematics) Academies in Virginia.

## GOVERNOR'S STEM ACADEMIES SPOTLIGHT

Students in the Information Technology program at Brooke Point High School (Stafford County Public Schools) presented information about computer networking history, equipment, practices and careers for the students enrolling in next fall's Computer Networking Hardware Operations I course. Following the presentation, students hosted a "Science Fiction Film Festival," screening student-created short films that used a variety of live-action, puppetry, and animation techniques. The students showed mastery in many aspects of story-telling and digital media production, while demonstrating the role of enduring themes, characters and imagery in creating memorable entertainment.

## CAREER LINKS—INFORMATION TECHNOLOGY

- [Crosswalking Occupations to Career Clusters](#) explains how new employment projections are matched to Career Clusters.
- According to the U.S. Bureau of Labor Statistics, there will be some 8.6 million jobs in science, technology, engineering and math by 2018. However, 67 percent of manufacturing companies say there is a shortage of qualified STEM workers, and more than half expect that shortage to grow over the next three to five years. An [infographic by Raytheon](#) gives an overview of the current STEM trends and offers predictions about what the future may hold.
- Visit the [National Center for Information and Communications Technologies](#) for resources on IT topics such as [Foundational Subjects](#), [Technologies](#), and [Tutorials](#).
- [National Institute for Women in Trades, Technology and Science](#) shares proven practices in the recruitment and retention of female students in technology.
- Course-by-course teaching resources for information technology teachers are available from the [University of North Texas](#).
- [Telecom Technologies](#), IT [Tutorials](#), and IT [Employment Links](#) are useful links from the National Center for Information and Communications Technologies (ICT).
- For current IT career and salary information, visit "[Job Prospects in the Information Technology Cluster](#)" in the [Trailblazers Newsletter](#) from the University of Virginia, April 2013 (scroll to pp. 6–8).
- Additional information about IT careers is available from [Microsoft Network Careers](#), [IT Career Paths](#), [Next Generation Careers: Information Technology](#), and [Virginia Career VIEW](#).

## GRANTS AND OPPORTUNITIES

- [GAME:IT](#), a flagship resource from Stemfuse, is being offered for FREE to the first 10,000 U.S. high schools who wish to participate. This is a semester-long, ready-to-teach game design course resource that also encompasses all facets of STEM. It aligns with all applicable state and national CTE, STEM, and Tech Ed standards and provides teacher training and teachers' guides.
- [American Honda Foundation](#) offers approximately 30 Youth Education Grants of \$20,000-\$75,000 over a one year period to support youth education with a specific focus on the STEM subjects in addition to the

environment. The application deadline is August 1, 2013.

## INSTRUCTIONAL STRATEGIES

- Funding provided by Virginia's General Assembly allows interested high schools and CTE regional centers to participate in a Microsoft Information Technology (IT) Academy partnership to include site licenses for certification testing at no cost to school divisions. Certification examinations are available to students for Microsoft Office Suite (Word, Excel, PowerPoint, Outlook, Access OneNote and SharePoint) and Certiprep practice exams. See [Superintendent's Memo](#) for additional information on the [Microsoft IT Academy Update](#) (Word) legislative report.
- [IBM Education Assistant](#) offers instructional modules for a wide variety of IBM software products.
- See [CS Principles](#) for [lesson plans](#) and links to other [computer science resources](#).
- [Information Technology Career Cluster Resources](#) and [Integrated Projects](#) are available from [STEM Transitions](#).
- For free online IT courses available to high school students and teachers, visit the following:
  - [Codecademy](#)
  - [MITOpenCourseware](#)
  - [Google Code University](#)
  - [Khan Academy Technology](#)
  - [Coursera](#)
  - [University of the People](#)
  - [edX](#)
  - [Udacity](#)

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